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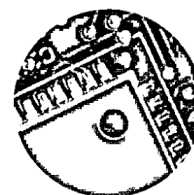
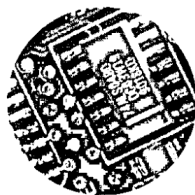
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acceptable use policy Norms regulating the usage of computer services, especially those of networks such as the Internet. The providers of the service establish what activities are and are not acceptable when using said service. A common example is an Internet service provider prohibiting sending unsolicited email or using an account for certain commercial purposes. Also called **Terms Of Service**.

acceptance angle 1. The maximum angle within which light is received by a light-sensitive device, such as a photodetector. 2. In fiber optics, the maximum angle of light that will enter one end of the fiber. Also called **acceptable angle**.

acceptance sampling The inspection of a sample to determine whether to accept the lot from which it was taken.

acceptance test A formal evaluation of equipment or software in order to determine if it works according to what the purchaser expects.

acceptor 1. In general terms, anything that accepts something. 2. A species, such as an atom, molecule, or ion, which accepts one or more electrons from another species. The donating species is called **electron donor**. Also called **electron acceptor**. 3. An electron-accepting impurity which is introduced into a crystalline semiconductor. The acceptance of electrons creates holes, which makes for a p-type semiconductor. Also called **acceptor impurity** or **acceptor material**.

acceptor atom 1. In semiconductors, an atom which accepts electrons, which in turn creates holes. For example, gallium or aluminum. 2. An atom which accepts electrons.

acceptor circuit A series-resonant circuit which provides a lower impedance at the tuned frequency, while offering a higher impedance at the rest. Such a circuit may be used, for instance, if seeking to pass only a desired frequency.

acceptor impurity Same as **acceptor** (3).

acceptor material Same as **acceptor** (3).

access 1. Entry to something, such as a network or the interior of an electronic device. 2. Connection to a network or system. For example, accessing the Internet. 3. The storage and/or retrieval of data to or from a computer storage medium. For example, accessing a hard drive, or retrieving a file. 4. A means of connecting to an electronic device without needing to open its interior. For example, using cables with phono plugs to connect a compact disc player and a high-fidelity amplifier using their phono jacks.

access arm A mechanical arm that positions a read/write head over the surface of a disk in a computer. Specific locations are accessed by moving the arm across, in conjunction with the rotation of the disk. Also called **actuator** (2), or **actuator arm**.

access charge 1. The charge that is imposed for access to a network, system, or service. For instance, a fee for access to long-distance telephone service. 2. The charge that is imposed for access to specific areas of a network, system, or service. For example, an Internet site that requires an additional charge in order to gain access to selected areas.

access code A code required to gain access to something, such as a computer terminal, a network, a secure area, or a particular form of telephone service.

access concentrator An access server that supports one or more T1 or E2 lines. Its abbreviation is **AC**. Also called **remote-access concentrator**.

access control An interactive mechanism which determines whether access is granted. Examples include getting permission to log onto a network, to access particular files, or to receive specific satellite programming.

access-control list A list which correlates which computer system or network resources are available to which users. Its abbreviation is **ACL**. Also known as **access list**.

access-control protocol The mechanisms utilized to authenticate a user who seeks to access a network, system, or service. Its abbreviation is **ACP**.

access denied A message received when a computer or network user attempts to access an area or information that is either unavailable or not available to that particular user.

access line 1. A line that accesses a network or system. 2. Same as **access link**.

access link In telephone systems, a circuit which links a subscriber or a PBX with a switching center, and provides access to long-distance calling. Also called **access line** (2).

access list Same as **access-control list**.

access management The various methods employed to help insure that only authorized personnel or programs have access to a network, system, or certain contained components.

access matrix An access list presented in tabular form.

access mechanism 1. The mechanism employed to position a read/write head over the surface of a disk in a computer. 2. The mechanism by which a computer program stores and/or retrieves data from a storage device. Also called **access method**.

access method Same as **access mechanism** (2).

access node Same as **access point**.

access number A telephone number utilized to access a given network or service. For example, a dial-up access number.

access path Same as **absolute path**.

access point A junction that interconnects networks. For example, it may refer to the connection point where Internet service providers are linked with each other. Also called **access node**, or **network access point**.

access privileges The level of operations that a user or program is allowed to perform on a computer system or network. Generally refers to the capability to access, use, or modify files, programs, or directories. Also called **access rights**.

access protocol Its abbreviation is **AP**. 1. The mechanisms used to authenticate a user who seeks to access a network, system, or service. 2. The protocols that govern transmissions between terminals in a network.

access provider An entity which provides access to the Internet. Customers usually pay a monthly fee for this service, although it usually available for free unless a high-speed connection is desired. Users get a software package to access and browse the World Wide Web, one or more email accounts, and Web pages to have a presence on the Internet. Other offerings may include Website building and hosting services. Users can connect via a dial-up service or an asymmetrical digital subscriber line, among others. Also called **Internet service provider**, **service provider**, or **online service provider** (1).

access rights Same as **access privileges**.

access server A computer that utilizes network-emulation software to connect asynchronous devices to a LAN or WAN. It manages communications, and takes care of protocol conversions. Also called **network-access server**, **remote-access server**, or **communications server**.

access speed Same as **access time**.

access time Also called **access speed**. Both instances generally apply to the exchange of information with the CPU, or to computer disks, such as hard disks or DVDs. 1. The time that elapses between a request for data and its delivery. Also called **memory access time**. 2. The time required to store information once the instruction is given.

access type In computers with restricted access, the type of operations a user may perform on a file or program. This generally refers to the ability to read, write, or execute.

contrast control A circuit, device, or system which controls the contrast (2) of reproduced images.

contrast medium A substance, usually a dye, which is introduced into an organ or other internal body structure which is to be analyzed via X-rays, MRI, or other similar medical diagnostic procedure, so as to enhance resolution.

contrast range The brightness interval between the lightest and darkest areas on a display screen, such as that of a computer or TV.

contrast ratio 1. For a display screen, such as that of a computer or TV, the ratio of the brightness of the lightest areas, to that of the darkest areas. 2. For a display screen, such as that of a computer or TV, the ratio of the maximum luminance, to the minimum luminance.

control 1. A circuit, device, component, piece of equipment, signal, mechanism, or system, or a combination of these, that operates, regulates, or manages. For instance, a control panel. 2. The operating, regulating, or managing effect a circuit, device, component, piece of equipment, signal, or system has. 3. The means by which a control system maintains the desired output. 4. A single factor or variable which is varied in two or more experiments in which the remaining factors and variables are held constant. This is done to better determine the influence of the factor or variable in question. 5. An object appearing on a computer screen, such as a push-button or scroll bar, which helps perform an action in a program. 6. Same as control key.

control accuracy In a control system, the level of correspondence between the controlled value and the ideal or specified value.

control action In a control system, an action taken to maintain the desired output.

control agent In a control system, an agent which controls a variable.

control block A block of computer memory that contains information used for control purposes.

control board Same as control panel (1).

Control-Break Same as Ctrl-Break.

control bus The conductors which carry control information between the CPU and other devices within a computer. For instance, interrupt request signals are sent over these conductors.

control center A location, device, console, terminal, or station which operates, regulates, or manages devices, equipment, or systems.

control channel A channel, such as a communications channel, that transmits control information.

control character 1. A character utilized to control a device, computer, piece of equipment, or system. 2. Within the ASCII character set, a control character (1). Such a character has an assigned numeric value, representing an ASCII code, and controls a function such as backspace. 3. A character which is typed in conjunction with the control key, such as control-A. The specific function for any given key combination will depend on which program is running.

control circuit 1. A circuit utilized to control a device, piece of equipment, system, or process. 2. In a computer, a circuit which responds to instructions, such as those of a control program.

control+click To press a computer mouse button while holding down the control key. Used, for instance, to add or remove an item to or from an already populated selection. In this context it is better suited for non-consecutive items, while a shift+click is simpler for consecutive items. Its abbreviation is Ctrl+click.

control+clicking To select and deselect utilizing control+clicks.

control code 1. A code utilized to control a device, computer, piece of equipment, or system. 2. In computers, a code which controls an action. Such codes may be in the form of control characters, and are utilized to control programs, peripheral devices, and the like.

control component A component utilized to control a device, piece of equipment, system, or process.

control computer A computer utilized in a control system. Used, for instance, to monitor selected parameters and send signals which maintain the desired output.

control counter Same as control register.

control data Computer data utilized to control data, programs, or hardware devices. Also called control information (1).

control desk Same as console (1).

control device A device which controls a given mechanism, piece of equipment, function, process, or system. An example is an infrared remote control for electronic equipment.

control diagram Also called control flow diagram, flow-chart, or flow diagram. 1. A diagram which uses a set of standard symbols to represent the sequence of operations of a system. 2. A diagram which uses a set of standard symbols to represent the sequence of operations of a computer program or system. Such a chart may show, for instance, the flow of data or the steps of a subroutine.

control electrode An electrode whose input is used to regulate the current of one or more other electrodes. For instance, the gate electrode in a field-effect transistor.

control element An element utilized to control a device, piece of equipment, system, or process.

control field In a computer record, a field which contains control information, such as the type of packet being transmitted.

control flow diagram Same as control diagram.

control function A function which controls a given piece of equipment, process, or system. For example, functions of a computer operating system.

control grid The control electrode in a vacuum tube. It is usually placed between the cathode and the anode.

control-grid bias In a vacuum tube, the average DC voltage applied between the control grid and the cathode.

control information 1. Same as control data. 2. Any information utilized for control purposes.

control instruction A computer instruction utilized to control data, programs, or hardware devices. For instance, an instruction pertaining to the operation of a peripheral. Also called control statement (2).

control key A modifier key included on computer keyboards that is used in combination with other keys to generate a function. The specific function for any given key combination will depend on which program is running. Also called control (6). Its abbreviation is Ctrl, or Ctrl key.

control knob A knob utilized to control or adjust the settings of a device or piece of equipment.

control language A set of language statements utilized to control programs or hardware devices. For example, a printer control language.

control logic The sequence of steps that hardware or software follow, to perform control functions.

control mark A control character or code which indicates a subdivision in a magnetic tape file. Also known as tape mark (2). Its abbreviation is CM.

control panel 1. A panel in which there are multiple indicators and devices, such as switches and dials, which enable a user to monitor and control a system. Used, for instance, to control an aircraft. Also called control board, or panel (1). 2. In a computer, a utility program which enables a user to

set many system parameters, such as keyboard and mouse characteristics, monitor resolution, and printer settings. Also called **control panel program**.

control panel program Same as **control panel (2)**.

control parallel A computer architecture in which multiple processors simultaneously and independently execute different instructions on different sets of data. Also called **multiple instruction stream-multiple data stream**.

control point In an automatic control system, the target value towards which the system makes adjustments. In the case of a thermostat, for instance, it would be a given temperature.

control processor A processor used in a control system.

control program A program which controls the operations of a computer, performing tasks such as managing system resources. An operating system is an example of such a program.

control register In a CPU, a register that contains the address of the location in memory that is to be accessed by the next instruction. May also refer to the address of the current instruction. Also called by various other names, including **control counter**, **current-instruction register**, **program counter**, **program register**, **instruction register**, **instruction counter**, and **sequence register**.

control rod A material utilized to control the reactivity of a nuclear reactor by absorbing neutrons. Examples include gadolinium, boron, and europium.

control room A room which houses the necessary devices and equipment to monitor and control a facility such as a TV recording studio or a nuclear power plant.

control sequence The order in which computer instructions are executed. For instance, the sequence followed while performing a given task.

control signal 1. A signal utilized to control a device or process. In a computer, for instance, such a signal may be an interrupt request. 2. In telecommunications, a signal that transmits control information. For example, a customer picks up a telephone receiver, hears a dial tone, dials a sequence of digits, and then gets a busy signal. All the tones heard are control signals.

control statement 1. A computer statement which controls the flow of execution of a program. For instance, an IF-THEN statement. 2. Same as **control instruction**.

control station Within a communications network, the station that manages all operations, such as the orderly flow of traffic.

control system A system utilized to maintain one or more output quantities within specified parameters. In a closed-loop control system, a feedback signal is incorporated for this purpose, while in an open-loop control system there is no such feedback. The components of a control system may be electrical, mechanical, thermal, and so on.

control total A total, composed of several numbers taken from a file, which is calculated before, during, and after processing. The numbers utilized to calculate the total do not necessarily have to be taken from numeric data. Control totals are used to verify the accuracy of processed data, or to help ensure that transmitted messages have not been tampered with. At all stages the calculated totals must match, otherwise there is an error. Also called **hash total**.

control track A track on a recordable magnetic medium, such as a tape or a disk, containing control signals such as tape playback speed.

control transformer A transformer utilized to supply a control device.

control unit 1. In a computer, circuitry that performs control functions such as sending control signals, interpreting program instructions, handling peripherals, or managing access

to memory locations. 2. A unit which controls a given mechanism, piece of equipment, function, process, or system.

control winding A winding that carries a current that controls the output of a machine.

control word A computer word which stores information used for a control function.

controlled-avalanche device A semiconductor device with precisely defined avalanche voltage characteristics. Such devices can absorb repeated momentary power surges without damage.

controlled-avalanche diode A semiconductor diode with precisely defined avalanche voltage characteristics. Such diodes can absorb repeated momentary power surges without damage, and can be used, for instance, for surge suppression.

controlled-carrier modulation A type of amplitude modulation in which the amplitude of the carrier wave is varied according to the percentage of modulation, providing for an essentially constant modulation factor. Also called **floating-carrier modulation**, or **variable-carrier modulation**.

controlled environment An enclosure, such as a room, in which measures are taken to provide an environment that meets certain requirements, such as maintaining a specified level of temperature and/or humidity, guarding against static electricity or electromagnetic radiation, or isolating from dust. Such environments may be used, for instance, for testing, or to protect sensitive electronic equipment.

controlled-path robot A robot whose movements are dictated by a **controlled-path system**.

controlled-path system A computer control system in which a path of movement is numerically described. Used, for instance, in robotics.

controlled rectifier A rectifier, such as a silicon-controlled rectifier, whose output current may be regulated.

controller 1. A circuit board or device which controls the way peripheral devices access the computer, and vice versa. It is usually contained on a single chip. Examples include disk controllers, graphics controllers, and video controllers. Also called **peripheral controller**, or **host adapter**. 2. A signal, circuit, device, or system which controls any given mechanism, function, process, or piece of equipment. An example is an infrared remote control for electronic equipment. 3. A circuit, mechanism, device, or system, which monitors one or more variables, and automatically makes the necessary adjustments in order to maintain operation within the specified parameters. Also known as **automatic controller**. 4. The computer and programs which control a robot. Also called **controller system**, or **robot controller**.

controller card A circuit board which controls the way peripheral devices access the computer, and vice versa. Examples include disk controllers, graphics controllers, and SCSI controllers.

controller system 1. A system which monitors one or more variables, and automatically makes the necessary adjustments, in order to maintain operation within the specified parameters. 2. Same as **controller (4)**.

convection The transmission of energy or matter through a medium, which is itself moved. For instance, in convection cooling, the air transferring the heat moves along with the heat. This contrasts with **conduction**, where the medium itself is not moved as a whole, and with **radiation**, where waves or particles are emitted.

convection cooling A process by which an object transfers heat to the surrounding air. The heated air is less dense, hence moving upward so that cooler air is then available for further cooling. Used, for instance, to cool components which generate heat, such as transistors.

ance, low output impedance, and a wide frequency-response with little phase distortion. Also known as **grounded-anode amplifier**, **cathode follower**, or **common-anode amplifier**.

grounded receptacle Same as **grounded outlet**.

grounded socket Same as **grounded outlet**.

grounded-source amplifier A field-effect transistor amplifier in which the source electrode, which is usually grounded, is common to both the input and output circuits. Also called **common-source amplifier**.

grounded-source circuit Same as **grounded-source connection**.

grounded-source connection For a field-effect transistor, a mode of operation in which the source electrode, which is usually grounded, is common to both the input and output circuits. Also called **grounded-source circuit**, or **common-source connection**.

grounded system A network or system of conductors within which at least one is intentionally grounded. Any grounded conductor may have one or more grounding points.

grounding Also called **earthing**. 1. The connection to a ground, or to a conductor connected to a ground. The term **grounding** refers to an intentional path to ground, while **ground fault** describes an unintentional path to ground. 2. The process of connecting to a ground, or to a conductor connected to a ground.

grounding bus Same as **ground bus**.

grounding cable Same as **ground cable**.

grounding circuit Same as **ground circuit**.

grounding clamp Same as **ground clamp**.

grounding conductor Same as **ground conductor**.

grounding connection Same as **ground connection**.

grounding electrode Same as **ground electrode**.

grounding lug Same as **ground lug**.

grounding mat Same as **ground mat**.

grounding outlet Same as **grounded outlet**.

grounding plate Same as **ground plate**.

grounding receptacle Same as **grounded outlet**.

grounding rod Same as **ground rod**.

grounding socket Same as **grounded outlet**.

grounding wire Same as **ground wire**.

group 1. A collection of things. Such a collection is usually located together, and/or regarded as a unit. For example, a family of chemical elements with similar properties arranged vertically within a periodic table. 2. In communications, a number of channels treated as a unit. For instance, a collection of associated voice channels in frequency-division multiplexing. 3. In computers, a collection of elements regarded as a unit. For example, a set of records in a database.

Group 3 facsimile Same as **Group 3 fax**.

Group 3 fax A fax that is compatible with the **Group 3 protocol**. It is the abbreviation of **Group 3 facsimile**. Its own abbreviation is **G3 fax**.

Group 3 protocol An international protocol for sending faxes over regular telephone lines. It supports data compression, and resolutions of up to 203 x 392 dpi.

Group 4 facsimile Same as **Group 4 fax**.

Group 4 fax A fax that is compatible with the **Group 4 protocol**. It is the abbreviation of **Group 4 facsimile**. Its own abbreviation is **G4 fax**.

Group 4 protocol An international protocol for sending faxes over ISDN lines. It is faster than **Group 3**, supports data compression, and provides resolutions of up to 400 x 400 dpi.

group busy signal Same as **group busy tone**.

group busy tone An audible signal indicating that there are no idle trunks in a group. Also called **group busy signal**, or **trunk busy signal**.

group delay The time interval required for the envelope of a wave to pass from one point to another in a transmission system. It is due to different frequencies traveling at slightly different speeds. Often refers to the envelope of a modulated signal. Also called **envelope delay (1)**.

group mark A symbol or code which indicates the beginning or end of data treated as a unit.

group velocity The velocity at which a wave group travels. It is the velocity of information propagation, and is not necessarily the same as that of energy propagation.

grouped records A set of records, such as that in a database, treated as a unit.

grouping 1. The formation of a **group**. 2. In a fax system, a periodic error in the spacing between recorded lines.

grouping factor The number of records in a disk block. It may be calculated by dividing the block length by the average length of the contained blocks. Also called **blocking factor**.

groupware Software designed to facilitate groups of people, often in different locations, to work together on one more projects. Such software includes emailing, scheduling, file transferring, application sharing, conferencing, the use of a whiteboard, and so on. Also called **workgroup software**, or **teamware**.

GroupWise A popular groupware offering.

Grove cell A primary cell consisting of a platinum electrode in nitric acid, and a zinc electrode in sulfuric acid, with a porous partition separating the electrolytes. It has a voltage of approximately 1.91.

growler 1. A device or instrument utilized to locate short-circuits, and which emits an audible signal upon finding any. Used especially to locate short-circuited coils in an electric generator or motor armature. 2. A device or instrument, utilized for testing or detection, which emits an audible signal.

grown-diffused junction A junction formed by diffusing impurities into the semiconductor material after a **grown junction** has been formed.

grown-diffused transistor A transistor with a **grown-diffused junction**.

grown junction A pn junction formed while a semiconductor crystal is being grown from a melt.

grown-junction transistor A transistor with **grown junctions**.

Gs Symbol for gauss.

GSE Abbreviation of **ground support equipment**.

GSM A digital cellular network technology which usually utilizes time-division multiple access. It is used in Europe and in many other parts of the world, and may operate in the 900 MHz, 1800 MHz, or 1900 MHz frequency bands. Aside from telephony, it supports voice mail, fax, caller ID, email, Internet access, and error-correction, among others. It is the abbreviation of **Global System for Mobile Communications**.

GSM 1800 A GSM network operating in the 1800 MHz band.

GSM 1900 A GSM network operating in the 1900 MHz band.

GSM 900 A GSM network operating in the 900 MHz band.

GSR Abbreviation of **galvanic skin response**.

gTLD Abbreviation of **generic top-level domain**.

guard band A narrow interval of frequencies between channels, which is left vacant to help prevent adjacent-channel interference. Also called **frequency guard band**.

instantaneous automatic volume control Same as instantaneous automatic gain control. Its abbreviation is IAVC.

instantaneous companding Companding in which the variations are made in response to the instantaneous value of a signal.

instantaneous condition The condition of a dynamic system at a specified moment in time.

instantaneous contacts Contacts, such as those of a timer, which are actuated the instant the driving signal is applied.

instantaneous current The value of a varying current, such as AC, at a particular instant within a cycle. Also called instantaneous current value.

instantaneous current value Same as instantaneous current.

instantaneous effect Any effect resulting from instantaneous changes in parameters such as amplitude, power, frequency, or impedance. An example is a failure which may occur due to a current surge.

instantaneous frequency 1. The frequency of a signal at a specified moment in time. 2. The time rate of change of a phase angle of a wave divided by 2π .

instantaneous magnitude 1. The magnitude of a varying quantity, such as a current or voltage, at a specified moment in time. 2. The magnitude of a signal at a specified moment in time.

instantaneous power The rate at which power is delivered to a load at a specified moment in time. Also called instantaneous power output.

instantaneous power output Same as instantaneous power.

instantaneous relay A relay which is actuated the instant the driving signal is applied.

instantaneous sample An individual measurement obtained during instantaneous sampling.

instantaneous sampling Sampling in which instantaneous values of a signal or wave are measured.

instantaneous sound pressure The sound pressure at a given point, at a specified moment in time. Used, for instance, to monitor impact noises.

instantaneous switch A switch that is actuated the instant the driving signal is applied.

instantaneous value The value of a varying quantity, such as current or voltage, at a specified moment in time.

instantaneous voltage The value of a varying voltage, such as alternating voltage, at a particular instant within a cycle. Also called instantaneous voltage value.

instantaneous voltage value Same as instantaneous voltage.

instantiate In object-oriented programming, the creation of an instance (3).

Institute of Electrical and Electronics Engineers Same as IEEE.

instruction 1. A command or statement in a computer program or routine. Also called **computer instruction** (1). 2. A computer instruction in machine code. Such an instruction can be directly executed by a processor. Also called **machine instruction**, or **computer instruction** (2).

instruction address An address indicating the location of a computer instruction.

instruction address register 1. A register which holds the address of the instruction which is next to be executed while running a program. 2. Same as **instruction register**.

instruction code A coded value or bit string within a machine instruction which specifies the operation to be performed by a processor. The operation may be a branch, add, copy, and so on. Also called **operation code**, or **opcode**.

instruction counter Same as **instruction register**.

instruction cycle The time interval during which an instruction is fetched from memory, decoded, and executed.

instruction fetch To locate an instruction in computer memory and load it into a CPU register. Once an instruction is fetched, it can then be executed. Also called **fetch**.

instruction format The components and layout of an instruction.

instruction mix The different types of instructions contained in a program. For example, I/O instructions, or control instructions.

instruction modification A change in an instruction that results in a different operation being performed when the same instruction is executed the next time.

instruction pointer Same as **instruction register**.

instruction register In a CPU, a register that contains the address of the location in memory that is to be accessed by the next instruction. May also refer to the address of the current instruction. Also called by various other terms, including **instruction counter**, **instruction address register**, **instruction pointer**, **control register**, **program counter**, **program register**, and **sequence register**.

instruction set The complete set of machine instructions that a CPU can recognize and execute.

instruction time 1. The time required for an instruction to be fetched from memory. It is the first part of an instruction cycle. 2. The time required to execute an instruction.

instruction word A computer word containing an instruction.

instrument Its abbreviation is **inst**. 1. A device utilized to directly or indirectly measure, indicate, and/or monitor the value of an observed and/or controlled quantity. Such an instrument may also record these variations. There are many examples, including altimeters, ammeters, bridges, circuit analyzers, compasses, digital multimeters, frequency meters, oscilloscopes, and spectrometers. Also called **measurement instrument**. 2. A device which enables the playing or production of music. For instance, an electric guitar or piano. 3. That which is dependent on one or more instruments (1). For example, instrument flying.

instrument accuracy The extent to which a value indicated by an instrument approximates the real value.

instrument amplifier Same as **instrumentation amplifier**.

instrument approach A landing approach utilizing an instrument approach system.

instrument approach system A radio navigation system which provides an aircraft with the information necessary for a safe approach. This includes indications of lateral, longitudinal, and vertical guidance during descent from a given altitude, until reaching a point where a landing can be completed.

instrument damping The reduction or limiting of the amplitude of movement of the indicator of an instrument, such as a galvanometer or volume meter, to minimize oscillation or overshoot. An instrument whose damping is sufficient for it to proceed from one reading to the next without oscillating or overshooting is called **deadbeat instrument**.

instrument error Same as **instrumental error**.

instrument flight Same as **instrument flying**.

instrument flying The flying of an aircraft relying solely on the instrumentation and communications. This usually necessary when visibility is inadequate. Also called **instrument flight**, or **blind flying**.

instrument housing A housing which encloses, supports, and protects an instrument.

instrument lamp Same as **instrument light**.

instrument landing The landing of an aircraft relying solely on instrumentation and communications. This usually nec-

perfect device A device with characteristics that correspond to a theoretical perfection. An example is an engine which converts 100% of its input power or energy into useful power or energy, such as work. Also called **ideal device**.

perfect dielectric A dielectric through which an electric field may be applied with no energy losses. A vacuum is an example, and its dielectric constant is defined as 1. Also called **ideal dielectric**.

perfect inductor An inductor with characteristics that correspond to a theoretical perfection. Such an inductor, for instance, would have zero losses. Also called **ideal inductor**.

perfect radiator An ideal body which would be a perfect emitter of radiant energy, its distribution of energy depending solely on its absolute temperature. It would also absorb all the radiant energy incident upon it. Also called **black-body**, **ideal radiator**, or **full radiator**.

perfect transducer A transducer with characteristics that correspond to a theoretical perfection. Such an transducer, for instance, would have zero losses. Also called **ideal transducer**.

perfect transformer A transformer with characteristics that correspond to a theoretical perfection. Such an transducer, for instance, would have a coupling coefficient of 1. Also called **ideal transformer**.

perfect vacuum A hypothetical space which contains no matter, and whose absolute pressure is defined as zero. Empty outer space approaches a perfect vacuum. Also called **absolute vacuum**, or **vacuum (1)**.

perforated board A plastic, resin, or laminated board with rows and columns of equally-spaced holes, upon which electronic devices and components can be mounted and interconnected, for testing, experimenting, and preparation of prototype circuits. Its abbreviation is **perfboard**.

performance 1. The level of functioning of a component, circuit, device, piece of equipment, system, material, or the like. Also, the act of functioning. 2. A comparative measure of the level of operation or function of a component, circuit, device, piece of equipment, system, material, or the like. For instance, high-performance, or small-signal performance.

performance characteristics Measurable features that help describe and distinguish the level of operation of components, circuits, devices, systems, materials, or the like.

performance chart A chart that describes, and helps evaluate, the level of operation of a component, circuit, device, system, material, or the like.

performance curve A curve that describes, and helps evaluate, the level of operation of a component, circuit, device, system, material, or the like. For example, a curve plotting the harmonic distortion of an amplifier as a function of frequency.

performance data Data which describes, and helps evaluate, the level of operation of a component, circuit, device, system, material, or the like. For example, such data gathered under harsh operating conditions.

performance monitor Software and/or hardware which enables the supervision of one or more performance aspects of a process, mechanism, system, or the like. For example, an onboard computer evaluating the operation of a car.

performance test A test that evaluates the level of operation of a component, circuit, device, system, material, or the like. For instance, tests performed keeping a load stable while varying other system parameters, so as to optimize performance.

performance testing The carrying out of performance tests.

period 1. An interval of time during which one or more phenomena, conditions, or events occur. For example, a busy period, or an early-failure period. 2. The interval of time

that elapses between two consecutive events of a periodically repeated phenomenon. For instance, the duration of a complete cycle. Also, the time interval elapsing between successive occurrences of the same phases of a cyclic event. Its symbol is *T*. 3. A series of elements which form a horizontal row within a periodic table of chemical elements.

periodic 1. Occurring, appearing, or characterized by regular and repetitive intervals or cycles. For instance, AC, the chopping of a signal, or the oscillation of a crystal. 2. Occurring, appearing, or characterized by irregular intervals. For example, the backing up of data occasionally. 3. Characterized or ordered by repeated properties. For instance, the sequencing of elements within a periodic table.

periodic and random deviation For a power supply, the total variation in output factoring in components such as ripple, load, noise, hum, stability, and temperature coefficient. Its acronym is **PARD**.

periodic antenna An antenna whose input impedance varies as a function of the operating frequency. An example is a dipole array.

periodic curve A curve or graph representing a **periodic function**. An example is a sine curve.

periodic duty A form of intermittent duty in which the work or operation of a device, piece of equipment, or system, occurs in regular and repetitive intervals or cycles.

periodic filter A filter whose response reflects its alternately passing and rejecting frequency bands. A comb filter is an example.

periodic function A function, such as a sine function, characterized by regular and repetitive intervals or cycles.

periodic law A law which states that the physical and chemical properties of chemical elements are a periodic function of their atomic number. Thus, when the elements are arranged in order of atomic number, as occurs in a periodic table, elements with similar properties will recur at regular intervals. This enables, for instance, to calculate properties of elements yet to be discovered.

periodic magnitude A magnitude whose variations are characterized by regular and repetitive intervals or cycles.

periodic noise Noise whose variations are characterized by regular and repetitive intervals or cycles.

periodic quantity A quantity whose variations are characterized by regular and repetitive intervals or cycles.

periodic resonance Resonance in which the period of oscillation of the external driving force is the same as the natural period of a given body or system. Also called **natural resonance (2)**.

periodic signal A signal whose variations are characterized by regular and repetitive intervals or cycles.

periodic table A table in which chemical elements are arranged so as to exploit patterns in physical and chemical properties, as provided by periodic law. A typical periodic table is arranged in columns and rows, where the columns represent groups of elements with the same electronic configuration in their outermost shell, which gives them similar properties. As each outer shell is filled, a new row of elements is started, and there is a one-by-one increase in atomic number as the elements progress from left to right.

periodic value A value whose variations are characterized by regular and repetitive intervals or cycles.

periodic wave A wave whose variations are characterized by regular and repetitive intervals or cycles.

periodic waveform 1. A waveform which occurs in a regular and repetitive pattern. 2. A repetitive waveform.

periodicity 1. The quality or state of being **periodic**. 2. The manner in which something is periodic. Also, that which makes something periodic.

- tion previously given to an entity to send information. For example, to cancel a subscription to a mailing list.
- untar** 1. To separate the individual files which were combined using a **tape archive** utility. 2. A utility utilized to **untar** (1).
- untuned** 1. That which has not been adjusted to a desired frequency. 2. A component, circuit, body, or system which has been not been adjusted so as to make it resonate with a given signal, force, or the like. 3. A component, circuit, device, piece of equipment, or system which has not been adjusted so as to attain optimum performance or output.
- untuned antenna** An antenna that has an approximately constant input impedance over a wide range of frequencies. A diamond antenna is an example. Also called **non-resonant antenna**, or **aperiodic antenna**.
- unzip** To uncompress files which have been compressed using a program such as WinZip or PKZIP.
- unzipping** The uncompression of files which have been compressed using a program such as WinZip or PKZIP.
- up** A device, piece of equipment, or system which is operational, or ready for use.
- up-conversion** The mixing of a signal with a local oscillator, so that the frequency of the output signal is higher than that of the input signal. This contrasts with **down-conversion**, where the output signal has a lower frequency than the input signal. Also spelled **upconversion**.
- up-convert** The performance of an **up-conversion**. Also spelled **upconvert**.
- up-converter** A converter whose output frequency is higher than its input frequency. This contrasts with a **down-converter**, whose output frequency is lower than that of the input. Also spelled **upconverter**.
- up counter** A counter that only counts upwards, as opposed to a **down counter**, which only counts downwards, or an **up-down counter** which does both.
- up-down counter** A counter which can count both upwards and downwards. It has, for instance, both an adding input and a subtracting input, thus giving it the ability to count in both directions. Also called **forward-backward counter**, or **bi-directional counter**.
- up-time** Same as **uptime**.
- UPC** Abbreviation of **universal product code**.
- upconversion** Same as **up-conversion**.
- upconvert** Same as **up-convert**.
- upconverter** Same as **up-converter**.
- update** 1. To make a change in an existing file or data, especially to make it more current. 2. A newer version of an existing program or software package. Each update has a higher version number than the last.
- upgrade** 1. A newer version of software and/or hardware. For example, an update, or the replacement of a CPU with a newer model. 2. To add power, speed, capacity, or the like, to existing hardware. For example, to increase RAM to 2 GB from 512 MB. 3. To perform or install an **upgrade** (1) or **upgrade** (2).
- upkeep** All activities which are performed to help insure the proper operation of components, circuits, devices, equipment, and systems. Maintenance is usually either preventive or corrective, and may include tests, adjustments, cleaning, and replacements. In the case of software, for instance, maintenance may involve updating or debugging. Also called **maintenance**.
- uplink** 1. The upward radio-communications path originating from an earth-based transmitter towards a communications satellite, or other airborne receiver. This contrasts with a **downlink** (1), which is the converse. 2. The establishing, or use, of an **uplink** (1).
- uplink frequency** The frequency, or band of frequencies, of an **uplink signal**.
- uplink port** In a communications network, especially Ethernet, a port which allows connections to hubs or switches without a crossover cable. Also called **Medium Dependent Interface Port**.
- uplink power** The power of an **uplink signal**.
- uplink signal** The signal sent in an **uplink** (1). Such a signal usually occupies a given band of frequencies.
- uplink station** A location from which an **uplink signal** is sent.
- upload** To send data, usually in the form of a file, to a remote computer in a network. For instance, a person updating a Web page maintained on the Internet may upload a file with new information. Also, the data or file transferred. This contrasts with a **download** (1), where information is sent from a remote computer in a network.
- UPnP** Abbreviation of **Universal Plug-and-Play**.
- upper atmosphere** The portion of the atmosphere above the troposphere.
- upper sideband** In double-sideband amplitude modulation, the band of frequencies above the carrier frequency. This contrasts with a **lower sideband**, which incorporates the band below the carrier frequency. Its abbreviation is **USB**.
- UPS** 1. Abbreviation of **uninterruptible power supply, uninterruptible power system, or uninterruptible power source**. 2. Abbreviation of **ultraviolet photoelectron spectroscopy**.
- upsampling** The increase of the sampling rate of a sampled signal. For instance, increasing the sampling rate of an audio sample from 44.1 kHz to 352.8 kHz.
- upstream** In communications, the direction of the flow of information from a customer to a content provider. For example, a person navigating the Internet sends information upstream when requesting a Web page. Generally utilized in the context of data transfer, but may also refer to other signals from customers, such as requests for pay-per-view programming. This contrasts with **downstream**, where the flow of information is in the other direction.
- uptime** The time during which a device, piece of equipment, or system is functioning or is otherwise operational. Also spelled **up-time**.
- upward compatibility** The state of being upward compatible.
- upward compatible** Software that is designed to be compatible with later versions of software or hardware, or hardware that is designed to be compatible with later versions of software or hardware. For instance, a program that was able to run on a given CPU generation also being able to work with a later generation. Forward compatibility is important in being able to upgrade components, programs, or systems in a simple and efficient manner. Also called **forward compatible**.
- uranium** A silver-white radioactive metallic element whose atomic number is 92. It is very dense, malleable, and ductile, and is a poor conductor of electricity. It is highly reactive, extremely toxic, and has over 20 known isotopes, all unstable. Its applications include its use as a source of nuclear power, and for conversion into plutonium. Its chemical symbol is **U**.
- uranium dioxide** Black crystals whose chemical formula is **UO₂**. Used as a nuclear fuel. Also called **uranium oxide**.
- uranium oxide** Same as **uranium dioxide**.
- urea-formaldehyde** Same as **urea-formaldehyde resin**.
- urea-formaldehyde resin** A thermosetting synthetic resin used as a dielectric. Used, for instance, to provide insulation in the form of a foam. Also called **urea-formaldehyde**.